

# INTERNATIONAL SEARCH REPORT

International Application No  
PCT/IB2004/051549

| <b>A. CLASSIFICATION OF SUBJECT MATTER</b><br>IPC 7 H01L29/78 H01L29/41 H01L29/08 H01L29/36 H01L21/336  |   |  |
|---|---|--|
| According to International Patent Classification (IPC) or to both national classification and IPC   |   |  |
| <b>B. FIELDS SEARCHED</b><br>Minimum documentation searched (classification system followed by classification symbols)<br>IPC 7 H01L  |   |  |
| Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched   |   |  |
| Electronic data base consulted during the international search (name of data base and, where practical, search terms used)<br>EPO-Internal, WPI Data, PAJ   |   |  |
| <b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>   |   |  |
| Category *  | Citation of document, with indication, where appropriate, of the relevant passages  | Relevant to claim No.  |
| X   | WO 02/01644 A (SILICON WIRELESS CORP ET AL) 3 January 2002 (2002-01-03)<br>page 25, line 3 - page 26, line 6; figure 9                                    | 1,3,4,<br>6-11   |
| X   | US 6 448 611 B1 (OH H-S)<br>10 September 2002 (2002-09-10)<br>column 3, line 43 - column 4, line 16;<br>figure 4<br>column 4, line 35 - line 40           | 1,3,11   |
| A   |   | 8  |
| X   | WO 02/49092 A (KONINKLIJKE PHILIPS ELECTRONICS NV) 20 June 2002 (2002-06-20)<br>cited in the application<br>page 5, line 3 - page 7, line 21; figures 1-9 | 1-3,10,<br>11  |
| A   |   | 8  |
| -/-   |   |  |
| <input checked="" type="checkbox"/> Further documents are listed in the continuation of box C. <input checked="" type="checkbox"/> Patent family members are listed in annex.   |   |  |
| * Special categories of cited documents :<br>"A" document defining the general state of the art which is not considered to be of particular relevance<br>"E" earlier document but published on or after the international filing date<br>"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)<br>"O" document referring to an oral disclosure, use, exhibition or other means<br>"P" document published prior to the international filing date but later than the priority date claimed<br>"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention<br>"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone<br>"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.<br>"&" document member of the same patent family |   |  |
| Date of the actual completion of the international search<br><br>1 December 2004  |   | Date of mailing of the international search report<br><br>18/03/2005 |
| Name and mailing address of the ISA<br>European Patent Office, P.B. 5818 Patentlaan 2<br>NL - 2280 HV Rijswijk<br>Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,<br>Fax: (+31-70) 340-3016  |   | Authorized officer<br><br>Morvan, D                                  |

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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages  | Relevant to claim No. |
|------------|---|-----------------------|
| X          | EP 0 069 429 A (NV PHILIPS<br>GLOEI LAMPENFABRIEKEN)<br>12 January 1983 (1983-01-12)<br>page 5, line 25 - page 7, line 20; figures<br>1,2 | 1,3,11                |
| A          | -----   | 8                     |

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### Box II. Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

### Box III. Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:  
1-4, 6-10 (when dependent on any one of claims 1-4), 11

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.  
☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-4,6-10 (when dependent on any one of claims 1-4),11

Electronic device comprising a transistor having a stepped shield structure in a drain extension area.  
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2. claims: 5, 6-10 (when dependent on claim 5)

Electronic device comprising a transistor having a higher doped drain extension portion adjoining a channel..  
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# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

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| Patent document<br>cited in search report |    | Publication<br>date | Patent family<br>member(s) | Publication<br>date |
|---|----|---------------------|----------------------------|---------------------|
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|   |    |                     | JP 2004502306 T            | 22-01-2004          |
|   |    |                     | WO 0201644 A2              | 03-01-2002          |
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| US 6448611                                | B1 | 10-09-2002          | KR 2001001608 A            | 05-01-2001          |
|   |    |                     | US 2002182810 A1           | 05-12-2002          |
| -----                                     |    |                     |                            |                     |
| WO 0249092                                | A  | 20-06-2002          | WO 0249092 A1              | 20-06-2002          |
|   |    |                     | EP 1346406 A1              | 24-09-2003          |
|   |    |                     | JP 2004516652 T            | 03-06-2004          |
|   |    |                     | US 2002102800 A1           | 01-08-2002          |
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| EP 0069429                                | A  | 12-01-1983          | NL 8103218 A               | 01-02-1983          |
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|   |    |                     | DE 3279955 D1              | 26-10-1989          |
|   |    |                     | EP 0069429 A2              | 12-01-1983          |
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